Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-03-07-01** **Date: 09-03-18**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Construction of Multi Utility Building for Allalasandra Swimming Pool in Ward No.04
Agency	:	Technical Manager(West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/138/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	07-03-18
Sample ID No	:	2018-03-07-01 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	07-03-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.12	–
2	Finess by Air permeablity method (m^2/kg,Min)	278.5	225m^2/kg, Min
3	Density (gm/cc)	3.11	–
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	125 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm

Note:

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-03-07-01** **Date: 04-04-18**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Construction of Multi Utility Building for Allalasandra Swimming Pool in Ward No.04
Agency	:	Technical Manager(West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/138/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	07-03-18
Sample ID No	:	2018-03-07-01 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	07-03-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.0N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-03-07-01** **Date: 10-03-18**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Construction of Multi Utility Building for Allalasandra Swimming Pool in Ward No.04
Agency	:	Technical Manager(West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/138/17-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	07-03-18
Sample ID No	:	2018-03-07-01 /02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	07-03-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	748	748	5.0	95.0	90-100
3	20 mm	4427	5175	34.5	65.5	30-70
4	10 mm	5937	11112	74.1	25.9	10-35
5	4.75 mm	3152	14264	95.1	4.9	0-5
6	Pan	736	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2018-03-07-01** **Date: 10-03-18**

Sample ID No : 2018-03-07-01 /02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.4	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	1.42	–
5	Bulk Density(Compacted) (Kg/l)	1.47	–
6	Water Absorption(%)	0.18	–

Note:

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2018-03-07-01** **Date: 10-03-18**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Construction of Multi Utility Building for Allalasandra Swimming Pool in Ward No.04

Agency : Technical Manager(West), KRIDL, Bangalore.

Customer's Reference : EE(Project)/YnkZone/WO/138/17-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 07-03-18

Sample ID No : 2018-03-07-01 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 07-03-18

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	36	36	3.6	96.4	90-100	90-100	90-100	95-100
3	2.36 mm	104	140	14.0	86.0	60-95	75-100	85-100	95-100
4	1.18 mm	226	366	36.6	63.4	30-70	55-90	75-100	90-100
5	600 micron	174	540	54.0	46.0	15-34	35-59	60-79	80-100
6	300 micron	214	754	75.4	24.6	5-20	8-30	12-40	15-50
7	150 micron	167	921	92.1	7.9	0-10	0-10	0-10	0-15
8	Pan	79	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2018-03-07-01 Date: 10-03-18

Sample ID No : 2018-03-07-01 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.27	–
2	Specific Gravity	2.53	–
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2018-03-09-01** **Date: 12-03-18**
Customer	:	Assistant Executive Engineer, Project Division, BBMP, Bangalore.
Address	:	Project Division, BBMP, Bangalore.
Project Name	:	Construction of Multi Utility Building for Allalasandra Swimming Pool in Ward No.04
Agency	:	Technical Manager(West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/138/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	09-03-18
Sample ID No	:	2018-03-09-01 /01
Sample Type/Size	:	Solid concrete blocks of size (400X100X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	09-03-18

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185 (Part 1):2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	402	102	202	8283	17.500	2112.8	2129.8	Not less than 1800Kg/m^3
2	401	101	202	8181	17.580	2148.8		
3	402	102	200	8201	17.450	2127.8		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185 (Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	18.260	17.410	4.88	4.76	Shall not be more than 10% by mass
2	18.310	17.390	5.29		
3	18.240	17.520	4.11		

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Lab ID : **CP-2018-03-09-01** **Date: 12-03-18**

Sample ID No : **2018-03-09-01**

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	402	102	202	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	401	101	203	
3	403	102	201	
4	402	103	203	
5	404	102	201	
6	405	103	203	
7	403	101	201	
8	401	103	202	
9	402	102	201	
10	401	103	203	
11	405	101	202	
12	404	103	201	
13	403	102	202	
14	402	101	203	
15	401	102	201	
16	403	103	202	
17	405	102	201	
18	402	103	203	
19	400	101	201	
20	403	102	202	
Average of 20	**403**	**102**	**202**	

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Lab ID : **CP-2018-03-09-01** **Date: 12-03-18**

Sample ID No : 2018-03-09-01

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	402	102	41004	185.7	4.5	4.4
2	401	101	40501	190.4	4.7	
3	403	102	41106	180.7	4.4	
4	402	103	41406	171.9	4.2	
5	404	102	41208	174.9	4.2	
6	405	103	41715	161.7	3.9	
7	403	101	40703	182.7	4.5	
8	401	103	41303	182.3	4.4	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	Minimum average	Minimum Individual units.
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2018-03-08-01** **Date: 13/03/2018**

Customer : Assistant Executive Engineer, Project Division, BBMP, Bangalore.

Address : Project Division, BBMP, Bangalore.

Project Name : Construction of Multi Utility Building for Allalasandra Swimming Pool in Ward No.04

Agency : Technical Manager(West), KRIDL, Bangalore.

Customer's Reference : EE(Project)/YnkZone/WO/138/17-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 08-03-18

Sample ID No : 2018-03-08-01 /01

Customer ID : M25 Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M25 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/03/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	M25 Concrete	M25	06/03/2018	13/03/2018	150.20 X 150.32 X 150.14	22578	8.276	537.4	23.8	22.9
2	M25 Concrete	M25	06/03/2018	13/03/2018	150.53 X 150.33 X 150.21	22629	8.288	518.2	22.9	
3	M25 Concrete	M25	06/03/2018	13/03/2018	150.11 X 150.53 X 150.22	22596	8.198	499.4	22.1	

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